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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/758,069

01/14/2004

Weijian Wang

3521.123D (ALJ)

5091

7590

11/21/2005

Allston L Jones
Peters Verny Jones & Schmitt LLP
427 Sherman Avenue Suite 230
Palo Alto, CA 94306

EXAMINER

DESIRE, GREGORY M

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 11/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/758,069

Applicant(s)

WANG, WEIJIAN

Examiner

Gregory M. Desire

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 11-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-10,23 and 27 is/are rejected.
- 7) ☒ Claim(s) 2-4,24-26 and 28-30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/14/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to communication filed 10/24/05.

Election/Restrictions

2. Applicant's election of Group I in the reply filed on 10/24/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Claims 11-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group II, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/24/05.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 5-10, 23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vandenberg et al (5,552,594) in view of Dotan (6,407,373) in further view of Tsuneta et al (5,650,621).

Regarding method and computer readable medium claims 1, 23 and 27 Vandenberg discloses,

Forming an image of the object at different focus positions (note col. 2 lines 40-45, cites images differing in focus positions), with variance of intensity (note col. 5 lines 55-60, examiner interpret normalized variance of illumination elements as variance of intensity)

Forming a set of contrast values by calculating a contrast value for each image based on variance and average intensity (note col. 5 lines 45-60, examiner interprets value of normalized variance as contrast value by calculating contrast value on variance and average intensity).

Determining the best focus position by fitting a Lorentzian function to said set of contrast values plotted as functions of said different focus positions (note col. 6 lines 4-11, functions which include Lorentzian is used to determine best focus positions by the peaks of a graph).

Vandenberg does not clearly disclose dark-field images. Dotan disclose capturing dark-field images (note col. 6 lines 25-27, imaging unit generates dark-field representation). Vandenberg and Dotan are combinable because they disclose focal positioning. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include dark-field images in the system of Vandenberg as evidenced by Dotan. The suggestion/motivation for doing so would have been improving the detection of object features (note col. 3 lines 25-30). Therefore it would have been obvious to combine Vandenberg with Dotan to obtain the invention as specified in the above claims.

Art Unit: 2627

Vandenberg as modified does not clearly disclose intensity distribution. Tsuneta disclose intensity distribution. Vandenberg as modified and Tsuneta are combinable because they disclose optical systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include intensity distribution in the system of Vandenberg as modified as evidenced by Tsuneta. The suggestion/motivation for doing so would have been using intensity distribution for analyzing dark-field images (note col. 3 lines 20-35). Therefore it would have been obvious to combine Vandenberg as modified with Tsuneta to obtain the invention as specified in the above claims.

Regarding method claim 5 Vandenberg discloses,

Region of interest is on a substantially reflective substrate (Vandenberg col. 4 lines 13-18).

Regarding method claim 6 Vandenberg discloses,

Wherein said region of interest on includes a pattern formed on said substrate (Vandenberg col. 3 lines 65-67, object includes a pattern).

Regarding method claim 7 Vandenberg discloses,

Wherein said pattern is a predetermined pattern structure capable of scattering light (Vandenberg col. 2 lines 161-67).

Art Unit: 2627

Regarding method claim 8 Vandenberg discloses,

Wherein said pattern is surface roughness (Vandenberg col. 3 lines 35-45).

Regarding method claim 9,

Wherein said reference position is a coordinate system of an apparatus that forms said plurality of dark fields. Vandenberg does not clearly disclose dark-field images. Dotan disclose capturing dark-field images (note col. 6 lines 25-27, imaging unit generates dark-field representation). Vandenberg and Dotan are combinable because they disclose focal positioning. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include dark-field images in the system of Vandenberg as evidenced by Dotan. The suggestion/motivation for doing so would have been improving the detection of object features (note col. 3 lines 25-30).

Therefore it would have been obvious to combine Vandenberg with Dotan to obtain the invention as specified in the above claim.

Regarding method claim 10 Vandenberg discloses,

Wherein said optical imaging system has a depth of field, and an effective focusing range of up to 10 times said depth of field (note col. 4 lines 29-40),

Allowable Subject Matter

6. Claims 2-4, 24-26 and 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding method and computer readable claims 2, 24 and 28, The prior art fails to teach the additional features of digitizing dark-field image such that intensity distribution is digitized and arranging the digitized intensity distribution into a histogram. These features in combination with other limitations are not taught in the prior art. Claims 3-4, 25-26 and 29-30 depend on claims 2, 24 and 28, respectively. Therefore are also allowable.

Conclusion

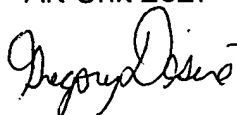
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory M. Desire whose telephone number is (571) 272-7449. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory M. Desire
Examiner
Art Unit 2627



G.D.
November 13, 2005